

IN THE CLAIMS:

Please delete claims 1-8 and insert new claims 9-24 as follows:

Sub 1 --9. A method of preparing water-insoluble α -1,4-glucans comprising contacting a reaction mixture comprising sucrose with an enzyme having amylosucrase enzymatic activity under aqueous, buffer-free conditions to provide a product mixture comprising water-insoluble α -1,4-glucans and fructose.

10. The method of claim 9 in which the enzyme having amylosucrase enzymatic activity is an enzyme from a prokaryotic organism.

A2 11. The method of claim 10 in which the prokaryotic organism belongs to the genus *Neisseria*.

12. The method of claim 11 in which the prokaryotic organism is *Neisseria polysaccharea*.

13. The method of claim 9 in which the enzyme having amylosucrase enzymatic activity is recombinantly produced.

Sub C1 14. The method of claim 9 in which the enzyme having amylosucrase enzymatic activity is substantially purified.

15. The method of claim 9 in which the enzyme having amylosucrase enzymatic activity is bound to a support material.

16. The method of claim 9 which further comprises adding an external carbohydrate acceptor to the reaction mixture.

17. The method of claim 16 in which the external carbohydrate acceptor is added at the beginning of the conversion.

18. The method of claim 17 in which the external carbohydrate acceptor is selected from linear or branched polysaccharides.

A2
Cmcd.
19. The method of claim 18 in which the external carbohydrate acceptor is selected from dextrin, glycogen, or amylopectin.

20. A method of preparing water-insoluble α -1,4-glucans comprising contacting sucrose with an amylosucrase under aqueous, buffer-free conditions to provide water-insoluble α -1,4-glucans and fructose.

21. The method of claim 20 in which the amylosucrase is from a prokaryotic organism.

22. The method of claim 21 in which the prokaryotic organism belongs to the genus *Neisseria*.

23. The method of claim 22 in which the prokaryotic organism is *Neisseria polysaccharea*.

24. The method of claim 20 in which the amylosucrase is designated (E.C. 2.4.1.4.).